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For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: COATED SHERICAL SEAMLESS FILLED CAPSULES

(57) Abstract: Described is a spherical coated capsule comprising (a) a coating-free capsule having (i) a liquid or viscous core and (ii) a seamless solid shell surrounding this core, and (b) a seamless, solid coating surrounding said coating-free capsule, wherein - the diameter of the coated capsule is in the range of 5 - 9 mm, - the solid coating comprises at least one sugar or sugar-alcohol in an amount from about 30 - 90% (m/m), based on the total mass of the coated capsule, - the diameter of the coating-free capsule is in the range of 3 - 7 mm, the thickness of the shell of said coating-free capsule is in the range of 20 - 200 µm, - the ratio of shell thickness to diameter of said coating-free capsule is in the range of 0.004 - 0.04, - the shell of said coating-free capsule contains 70 - 90 % (m/m) gelatine or alginate and 10 - 30 % (m/m) plasticiser, based on the solids content of said shell, and - the core has a flavouring content in the range of 1 - 100 % (m/m), based on the total mass of the core. Further described is a method for preparing such capsule.

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**A. CLASSIFICATION OF SUBJECT MATTER**

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According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 778 083 A (FREUNT IND CO LTD) 11 June 1997 (1997-06-11) column 9, line 6 - column 9, line 10; figures 1,2; examples 1,2	1-17
A	US 6 200 603 B1 (HALE KATE ET AL) 13 March 2001 (2001-03-13) cited in the application claims 1-8	1-16
A	WO 91/17821 A (DANOCHMO AS) 28 November 1991 (1991-11-28) the whole document	1-16
A	US 6 238 690 B1 (GLENN BLAKE HENDERSON ET AL) 29 May 2001 (2001-05-29) the whole document	1-17

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0778083	A	11-06-1997	JP 9155183 A	17-06-1997
			DE 69628394 D1	03-07-2003
			DE 69628394 T2	04-03-2004
			EP 0778083 A1	11-06-1997
			US 5882680 A	16-03-1999
US 6200603	B1	13-03-2001	AT 223708 T	15-09-2002
			AU 731923 B2	05-04-2001
			AU 6843698 A	20-10-1998
			BR 9815466 A	23-10-2001
			CA 2284034 A1	01-10-1998
			DE 69807854 D1	17-10-2002
			DE 69807854 T2	30-04-2003
			EP 0971704 A1	19-01-2000
			ES 2181195 T3	16-02-2003
			WO 9842316 A1	01-10-1998
			JP 2001505925 T	08-05-2001
WO 9117821	A	28-11-1991	AU 7903191 A	10-12-1991
			WO 9117821 A1	28-11-1991
			DK 530277 T3	02-01-1995
			EP 0530277 A1	10-03-1993
			FI 925101 A	10-11-1992
US 6238690	B1	29-05-2001	US 5795590 A	18-08-1998
			US 5595757 A	21-01-1997
			US 5888538 A	30-03-1999
			BR 9607905 A	09-06-1998
			CA 2215313 A1	03-10-1996
			CN 1183058 A ,B	27-05-1998
			EA 816 B1	24-04-2000
			EP 0817672 A1	14-01-1998
			HU 9801388 A2	28-09-1998
			JP 11509768 T	31-08-1999
			PL 322467 A1	02-02-1998
			SK 132097 A3	04-03-1998
			WO 9630115 A1	03-10-1996